A New Tool for Aligning Assay Endpoints to Adverse Outcome Pathways

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A critical toxicological challenge is linking endpoints measured in non-animal approaches to adverse physiological responses in vivo. The adverse outcome pathway (AOP) framework allows placement of these molecular, cellular, and tissue-level endpoints into a biologically relevant context. The National Toxicology Program's Integrated Chemical Environment (ICE) web resource houses curated data from in vivo, in vitro, and in silico endpoints. We present a new feature of ICE that maps assay endpoints to key events within AOPs. We demonstrate how this feature can be used to identify data gaps, build confidence in mechanistic plausibility and relevance, and provide insights on potential adverse outcomes using AOPXplorer. This presentation will use the skin sensitization AOP and putative AOPs for androgen and estrogen receptor pathways to demonstrate the utility of this feature. This was funded with U.S. federal funds from the NIEHS/NIH/HHS under Contract HHSN273201500010C.